

## Patent claims:

1. Optical assembly having a plurality of optical elements, characterized in that at least one optical element (2', 2'')  
5 is connected to a structure (5) dynamically decoupled from the optical assembly (1), as a result of which it is substantially dynamically decoupled from the remaining optical elements (2) and the optical assembly (1).
- 10 2. Optical assembly according to Claim 1, characterized in that provided in a housing (1a) of the optical assembly (1) is at least one opening (7) through which the dynamically decoupled optical element (2', 2'') can be connected to the structure (5) dynamically decoupled from the optical assem-  
15 bly (1).
3. Optical assembly according to Claim 1 or 2, characterized in that sensors (8) are provided for determining the position of the optical element (2') relative to the housing  
20 (1a) or relative to the remaining optical elements (2) of the optical assembly (1).
4. Optical assembly having a plurality of optical elements and a beam path produced therein, characterized in that by  
25 means of a feeder device (22) at least one optical element (12') can be interchangeably inserted into the beam path (11) and removed therefrom, the optical element (12') which can be inserted into the beam path (11) and removed there-  
30 maining optical elements (12) and the optical assembly (10).

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5. Optical assembly according to Claim 4, characterized in that an opening adapted to the dimensions of the optical element (12') which can be inserted into the beam path (11) and removed therefrom is provided in a housing (10a) of the optical assembly (10).

6. Optical assembly according to Claim 4 or 5, characterized in that the feeder device (22) is dynamically decoupled from the optical assembly (10) and is connected to a structure (19) dynamically decoupled from the optical assembly (10).

7. Optical assembly according to Claim 4, 5 or 6, characterized in that the dynamically decoupled optical element (12') can be positioned and/or fixed in the beam path (11) via a lifting device (20).

8. Optical assembly according to Claim 7, characterized in that the lifting device (20) is dynamically decoupled from the optical assembly (10) and connected to the structure (19) dynamically decoupled from the optical assembly (10).

9. Optical assembly according to one of Claims 4 to 8, characterized in that a holding device (18) is provided as stop and/or for fixing the dynamically decoupled optical element (12') in the beam path (11).

10. Optical assembly according to Claim 9, characterized in that for the purpose of fixing the dynamically decoupled optical element (12') in the beam path (11), the holding device (18) is connected to one of the remaining optical elements (12).

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11. Optical assembly according to Claim 9 or 10, characterized in that the dynamically decoupled optical element (12') can be fixed via magnetic forces of the holding device (18).

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12. Optical assembly according to one of Claims 4 to 11, characterized in that spring elements (23) are provided between the lifting device (20) and the dynamically decoupled optical element (12').

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13. Optical assembly according to one of Claims 7 to 12, characterized in that the feeder device (22) and/or the lifting device (20) are arranged outside the optical assembly (10).

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14. Optical assembly according to one of Claims 1 to 13, characterized in that the dynamically decoupled optical element (2') can be manipulated by means of actuators.

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15. Optical assembly according to one of Claims 1 to 14, characterized in that the dynamically decoupled optical element is designed as a diaphragm, in particular a revolving disc diaphragm (12').

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16. Optical assembly according to one of Claims 1 to 15, characterized in that it is designed as an optical imaging device (1), in particular a projection objective (10).

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17. Optical assembly according to one of Claims 1 to 15, characterized in that it is designed as an illuminating system.

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18. Optical assembly according to one of Claims 1 to 17, characterized in that it is used in a projection exposure machine (30) for microlithography in the field of EUVL for producing semiconductor components.

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19. Projection exposure machine (30) for microlithography in the EUVL field for producing semiconductor components with the aid of an optical assembly in accordance with Claim 16.